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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/705,269	11/10/2003	Hiroyuki Shinbata	1232-5196	4906

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EXAMINER

BAYAT, ALI

ART UNIT	PAPER NUMBER
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2624

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/17/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/705,269

Applicant(s)

SHINBATA ET AL.

Examiner

Ali Bayat

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 November 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,4-9 and 12-18 is/are rejected.
- 7) ☒ Claim(s) 2,3,10 and 11 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date See Continuation Sheet.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

Continuation of Attachment(s) 3). Information Disclosure Statement(s) (PTO/SB/08), Paper No(s)/Mail Date
:10/7/04;12/6/04;10/28/05;2/17/06.

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DETAILED ACTION

Specification

1. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

Claims 1 and 9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1, lines 8-10, the phrase "distribution of coefficient values of every frequency band will become a prescribed frequency distribution", is unclear to the examiner, it is not clear whether it refers to the phrase in lines 6-7 "at least one frequency band of the plurality of frequency bands" or to the phrase in line 4 "a plurality of frequency bands". Please point out the distinction.

Claims 9, lines 24-26, the phrase "distribution of coefficient values of every frequency band will become a prescribed frequency distribution" is unclear to the examiner, it is not clear whether it refers to the phrase in lines 22-23 "at least one frequency band of the plurality of frequency bands" or to the phrase in line 20 "a plurality of frequency bands". Please point out the distinction.

Claim Rejections - 35 USC § 101

3. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

The USPTO "Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility" (Official Gazette notice of 22 November 2005), Annex IV, reads as follows:

Descriptive material can be characterized as either "functional descriptive material" or "nonfunctional descriptive material." In this context, "functional descriptive material" consists of data structures and computer programs, which impart functionality when employed as a computer component. (The definition of "data structure" is "a physical or logical relationship among data elements, designed to support specific data manipulation functions." The New IEEE Standard Dictionary of Electrical and Electronics Terms 308 (5th ed. 1993).) "Nonfunctional descriptive material" includes but is not limited to music, literary works and a compilation or mere arrangement of data.

When functional descriptive material is recorded on some computer-readable medium it becomes structurally and functionally interrelated to the medium and will be statutory in most cases since use of technology permits the function of the descriptive material to be realized. Compare *In re Lowry*, 32 F.3d 1579, 1583-84, 32 USPQ2d 1031, 1035 (Fed. Cir. 1994) (claim to data structure stored on a computer readable medium that increases computer efficiency held statutory) and *Warmerdam*, 33 F.3d at 1360-61, 31 USPQ2d at 1759 (claim to computer having a specific data structure stored in memory held statutory product-by-process claim) with *Warmerdam*, 33 F.3d at 1361, 31 USPQ2d at 1760 (claim to a data structure per se held nonstatutory).

In contrast, a claimed computer-readable medium encoded with a computer program is a computer element which defines structural and functional interrelationships between the computer program and the rest of the computer which permit the computer program's functionality to be realized, and is thus statutory. See *Lowry*, 32 F.3d at 1583-84, 32 USPQ2d at 1035.

Claims 17-18 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter as follows.

Claim 17 recites "A program for causing a computer to implement the image processing method set forth in claim 9.

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Claim 17 defines **[a computer program]** embodying functional descriptive material. However, the claim does not define a computer-readable medium or memory and is thus non-statutory for that reason (i.e., "When functional descriptive material is recorded on some computer-readable medium it becomes structurally and functionally interrelated to the medium and will be statutory in most cases since use of technology permits the function of the descriptive material to be realized" – Guidelines Annex IV). That is, the scope of the presently claimed **[a computer program]** can range from paper on which the program is written, to a program simply contemplated and memorized by a person. The examiner suggests amending the claim to embody the program on "computer-readable medium" or equivalent in order to make the claim statutory. **(A computer program stored in a computer-readable medium for causing a computer to execute the image processing method set for the in claim 9).** Any amendment to the claim should be commensurate with its corresponding disclosure. Further note claim 18 should change to **(A computer-readable medium storing a computer program for causing a computer to execute the image processing method set for the in claim 9).**

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) The invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for

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patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-18 are rejected under 35 U.S.C. 102(e) as being anticipated by Shinbata (US patent 7,079,700).

The applied reference has a common assignee (Canon Kabushiki Kaisha, Tokyo (JP)) with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

In regard to claims 1 and 9, as best understood, Shinbata provides for an image processing apparatus/method (Fig.36 col.37 lines 40-43) comprising: decomposing means for decomposing an image into components of a plurality of frequency bands (Fig.40 col.38 lines 14-16); converting means for converting coefficient values with regard to at least one frequency band of the plurality of frequency bands (col.38 lines 40-42, note all frequency coefficients other than LL subband coefficients

are converted) in such a manner that a frequency distribution of coefficient values of every frequency band (col.38 lines 40-42, note all frequency coefficients other than LL subband coefficients, which are converted) will become a prescribed frequency distribution (col.38 lines 40-51, note the predetermined threshold value is determined by experiments in advance, which corresponds to prescribed frequency distribution in regard to all the converted frequencies coefficients); and generating means for generating an image using the coefficient values obtained by said converting means (Fig.36 element 4140).

With regard to claims 4 and 12 Shinbata provides for an apparatus/method, further comprising changing means for changing a conversion characteristic of the coefficient values obtained by said converting means (col.39 lines 25-29, note coefficients less than the predetermined absolute value (threshold value) (a3b) are decreased).

As to claims 5 and 13 Shinbata provides for an apparatus/method, wherein changing means changes the conversion characteristic in such a manner that coefficient values after conversion will change uniformly at a prescribed ratio (col.39 lines 27-29, note coefficients are monotonously increased from 0. which corresponds to change uniformly at a prescribed ratio).

With regard to claims 6 and 14 Shinbata provides for an apparatus/method, wherein decomposing means decomposes the image into components of a plurality of frequency bands using a wavelet transform (Fig.40 col.38 lines 14-17).

In regard to claims 7 and 15 Shinbata provides for an apparatus/method,

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wherein converting means converts coefficient values in such a manner that a frequency distribution of coefficient values in a range (Fig.41 note range a₃ which is within a given threshold value range col.38 lines 30-35) which is part of a range of values that can be taken on by the coefficient values becomes a prescribed frequency distribution (col.38 lines 30-35, note high frequency coefficients).

As to claims 8 and 16 Shinbata provides for an apparatus/method, wherein converting means holds unchanged coefficient values (col.38 lines 30-33, note high frequency coefficients equal to or higher than a predetermined absolute value (threshold value) are not converted, which corresponds to holding the unchanged coefficients values) in a range which is part of a range of values that can be taken on by the coefficient values (col.38 lines 35-38, note that function " F3" converts high frequency coefficients equal to or higher than a predetermined absolute threshold value and those less than the predetermined threshold value at different magnifications)

In regard to claims 17-18, Shinbat provides for a program and a storage medium storing a program for causing a computer to implement the image processing method (col.6 lines 8-10, also Fig.36 elements 4110 ,4120 and 4130).

Objected Claims

5. Claims 2-3 and 10-11 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Other Cited References

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. patent 7,142,722 to Fukuhara et al. is cited for image coding device and coding method of same.

U.S. Pub.No. 2003/0097068 to Hossack et al. is cited for medical diagnostic ultrasound system and method for versatile processing.

U.S. Pub. No. 2002/0169761 to Endo et al. is cited for data search system and data search method.

U.S. patent 6,463,173 to trotter is cited for system and method for histogram- based image contrast enhancement.

U.S. patent 6,163,621 to Paik et al. is cited for histogram equalization method and device in contrast enhancement apparatus for image processing system.

U.S. patent 6,130,724 to Hwang is cited for image processing apparatus and method for magnifying dynamic range.

Contact Information

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ali Bayat whose telephone number is 571-272-7444.

The examiner can normally be reached on M-F 9:00 AM-5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Bella can be reached on 571-272-7778. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Ali Bayat

A handwritten signature in black ink, appearing to read 'Ali Bayat', with a horizontal line drawn above it.

Patent examiner

Division 2624

4/11/07
